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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/447,472	11/23/1999	JAMES B. ARMSTRONG	007412.00289	3863

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EXAMINER	
CHOWDHURY, SUMAIYA A	
ART UNIT	PAPER NUMBER
2421	

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12/22/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/447,472	ARMSTRONG ET AL.	
	Examiner	Art Unit	
	SUMAIYA A. CHOWDHURY	2421	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 December 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6-8,19,21-25 and 27-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6-8,19,21-25 and 27-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see Remarks, filed 12/1/09, with respect to claims 1-4, 6-8, 19, 21-25, and 27-34 have been fully considered and are persuasive. The Office Action of 9/1/09 has been withdrawn.

(a) Applicant argues with respect to the Ong reference "Once Ong's movie files are categorized as "infrequently requested," they are not copied or otherwise transferred from the buffer – rather they are simply deleted.".

The Examiner has brought in Viswanathan (5936659) to teach this limitation. In particular, Viswanathan teaches a video server in which movies are loaded into different tiers (partitions) based on their popularity. Once a movie's popularity changes, it is shifted between partitions (col. 2, lines 24-45).

(b) Applicant argues "Ueno, the secondary reference, does not cure the deficiencies of Ong (such as for example, selecting a specific head-end for storing the infrequently requested content and then storing the content in a secondary partition of that head-end).".

Ueno teaches selecting a specific head-end for storing content, and Viswanathan teaches storing infrequently requested content onto the secondary partition of the server.

(c) Applicant argues "In contrast, Ueno does not disclose a content manager that "in response to determining that a requested video asset is stored locally, is

adapted to notify the stream session manager to deliver the requested video asset."".

The Examiner has brought in Starnes (6510469) to teach this limitation. Starnes teaches in response to determining that a file requested by the browser is stored locally, the proxy server notifies the acceleration server to deliver the file to the proxy server for transmission to the browser via the network (col. 5, lines 30-53, col. 6, lines 27-48).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3, 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Viswanathan (5936659) in view of Ueno.

As for claim 1, Viswanathan teaches:

A server (three-tiered video server) for distributing requested video assets to requesting subscriber equipment via the access network (col. 2, lines 24-45);

a storage (three-tiered video server) having a primary storage partition (first tier) for storing frequently requested video assets, and a secondary storage

partition (second tier and third tier) for storing infrequently requested video assets (col. 2, lines 24-45);

a manager for managing migration of video assets, wherein the manager tracks asset request rates and threshold rates of respective video assets (Since the engine assigns movies as either being one of a high priority movie or low priority movie, and transfers a movie between the tiers based on the number of user requests, the asset and threshold rates are inherently tracked. Col. 2, lines 24-45);

wherein the manager, in response to an infrequently requested video asset becoming frequently requested, stores the frequently requested video asset in the primary storage partitions (Once a low priority movie becomes frequently requested, it is transferred to the primary partition, the first tier. Col. 2, lines 24-45);

wherein the manager, in response to a frequently requested video asset becoming infrequently requested, stores the infrequently requested video asset in the secondary storage partition (Once the high priority movie in the first tier becomes infrequently requested, it is transferred either to the second or third tier. Col. 2, lines 24-45);

Viswanathan fails to disclose:

a plurality of head-ends coupled to subscriber equipment via an access network, the head-ends comprising a server;

distributing an infrequently requested video assets amongst a plurality of the head-ends;

when the video asset becomes frequently requested, selecting a plurality of head-ends to store the video asset, and when the video asset becomes infrequently requested, selecting at least one head-end to store the video asset.

In an analogous art, Ueno teaches:

a plurality of head-ends (1001, 1005, 1006, fig. 10) coupled to subscriber equipment (STUs, 1010-1013) via an access network (1008), the head-ends comprising a server (1001, 1005, 1006).

distributing infrequently requested video assets amongst a plurality of head-ends (Ueno teaches low frequency video assets are stored in the center server. Ueno further teaches that there exists at least one center server. From this it can be inferred that there are multiple center servers which store low frequency video assets; See Abstract);

when the video asset becomes frequently requested, selecting a plurality of head-ends (local server) to store the video asset, and when the video asset becomes infrequently requested, selecting at least one head-end (center server) to store the video asset (Ueno teaches that frequently requested video assets are stored on at the local servers, and infrequently requested video assets are stored at the center servers. Hence, when the frequency of the video assets goes above or below a threshold, the other type of server is selected to store the video asset; col. 19, line 66-col. 20, line 9).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Viswanathan's invention to include the abovementioned limitation, as taught by Ueno, for the advantage of spreading

out the video assets such that the processing power at a single head-end is reduced. A further advantage would be that the video would still be available to the user in the event that the designated head-end had a system failure.

As for claim 2, Viswanthan discloses the manager is adapted to identify an infrequently requested video asset as becoming frequently requested when the asset request rate crosses above the threshold rate (when movie becomes high priority; col. 2, lines 24-45); and

The manager is adapted to identify a frequently requested video asset as becoming infrequently requested when the asset request rate crosses below the threshold rate (col. 2, lines 24-45).

As for claim 3, Viswanthan teaches in response to a request for a video asset received from requesting subscriber equipment, the manager controls distribution of the requested video asset from the head-end (col. 2, lines 24-45). Ueno teaches distributing the movie from the head-end identified as storing the requested video asset to the requesting subscriber equipment (Abstract; col. 19, line 66-col. 20, line 9).

Claim 19 contains the limitations of claim 1 and is analyzed as previously discussed with respect to that claim. Claim 19 additionally calls for the following which Viswanathan teaches:

determining an asset request rate for each of said the video assets stored in each head-end; comparing the determined asset request rates with respective threshold rates of each of the video assets (Since the server assigns movies as either being one of popular or not so popular, and transfers movies between the tiers based on the number of user requests, the asset and threshold rates are inherently tracked. Col. 2, lines 24-45);

Claim 21 contains the limitations of claim 1 and is analyzed as previously discussed with respect to that claim.

4. Claims 4, 7-8, 22-25, and 28-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Viswanathan and Ueno, in view of Sato (6173328).

As for claims 4 and 22, Ueno teaches the manager comprises:
a content manager (service control unit 1007), for receiving the request for the
video asset and determining whether the requested video asset is stored locally in the storage of that head-end (1005, col. 19, lines 37-43) at which the video asset request is received (local server 1005 and service control unit 1007 are a single unit; col. 21, lines 43-52) or stored remotely in the storage of a different head-end;

a stream session manager (server resources management control unit 1003), for directing the associated server to distribute streams of video assets to subscriber equipment requesting said the video assets (col. 19, lines 20-55);

Hoever, Viswanathan and Ueno fail to teach:

a content session manager for responding to video asset requests forwarded from managers of other ones of the head-ends.

In an analogous art, Sato discloses:

a content session manager for responding to video asset requests forwarded from managers of other ones of the head-ends (col. 6, lines 16-42).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Viswanathan and Ueno's invention to include the above mentioned limitation, as taught by Sato, for the advantage of effectively utilizing storage space amongst servers.

As for claim 7, Ueno teaches wherein the content manager of a local head-end at which a video asset request is received, in response to determining that a requested video asset is stored remotely in the storage of a remote head-end, instructs the stream session manager of the local head-end to contact the content session manager of the remote head-end (The local server 1005 and service control unit 1007 are one combined unit – col. 21, lines 43-50. A user request is received at the service control unit 1007 which determines where the

requested video is stored - col. 19, lines 20-50. If it is determined that the video is stored remotely at server 1001, the video is requested from there and transmitted to the user).

As for claim 8, Ueno teaches wherein the content session manager of the remote head-end identifies the requested video asset in the storage of the remote head-end, allocates bandwidth for transmitting the requested video asset, and, in response to a determination that the requested video asset is to be provided from the remote head-end to the requesting subscriber equipment via the local head-end, notifies the server of the remote head-end to transmit the requested video asset to the local head-end using the inter-server network - col. 21, lines 43-50, col. 19, lines 20-50, col. 18, lines 21-57.

As for claim 23, Ueno discloses wherein the identified head-end is the local head-end (1005) coupled directly to the requesting subscriber equipment, the local head-end provides the requested video asset to the requesting subscriber equipment via the access network (1008) – col. 19, lines 20-50, col. 21, lines 43-53.

As for claims 24, Ueno discloses wherein, the identified head-end is one of the remote head-ends, the local head-end requests the requested video asset from the remote head-end and the remote head-end provides the requested video asset to the local head-end via an inter-server network (The local server

1005 and service control unit 1007 are one combined unit – col. 21, lines 43-50. A user request is received at the service control unit 1007 which determines where the requested video is stored - col. 19, lines 20-50. If it is determined that the video is stored remotely at server 1001, the video is requested from there and transmitted to the user).

Claim 25 contains the limitations of claims 1 and 4 and is analyzed as previously discussed with respect to those claims. Claim 25 additionally calls for the following:

A plurality of head-ends comprising at least a local first head-end (local server) and a remote second head-end (center server); (Ueno; See Abstract);

A content session manager for receiving asset requests forwarded from other ones of the head-ends, identifying and retrieving requested video assets requested by content managers of other ones of the head-ends, and providing requested video assets to the other ones of the head-ends (Sato; col. 6, lines 16-42).

As for claim 28, Ueno discloses wherein, the identified head-end is one of the remote head-ends, the local head-end requests the requested video asset from the remote head-end and the remote head-end provides the requested video asset to the local head-end via an inter-server network (The local server 1005 and service control unit 1007 are one combined unit – col. 21, lines 43-50.

A user request is received at the service control unit 1007 which determines where the requested video is stored - col. 19, lines 20-50. If it is determined that the video is stored remotely at server 1001, the video is requested from there and transmitted to the user).

As for claim 29, Ueno discloses wherein the content session manager of the remote head-end identifies the requested video asset in the storage of the remote head-end and allocates bandwidth for transmitting the requested video asset (When a user requests a VOD program, bandwidth is allocated. – col. 18, lines 21-57, col. 19, lines 20-56).

As for claim 30, Ueno teaches in response to a determination that the requested video asset is to be provided from the remote head-end to the requesting subscriber equipment via the local head-end, the content session manager of the remote head-end notifies the server of the remote head-end to transmit the requested video asset to the local head-end- (One the basis of the directions by the server resources management control unit 1003, a video is transmitted, via channels 1019 (connection between local head-end and STB) to STUs – col. 18, lines 20-35, col. 19, lines 20-50).

As for claim 31, Ueno teaches in response to a determination that the server of the local head-end is available to receive the requested video asset

from the remote head-end, the server of the remote head-end streams the requested video asset to the local head-end over the inter-server network – Fig. 10, col. 19, lines 20-50, col. 21, lines 40-55, col. 18, lines 20-32.

As for claim 32, Ueno teaches wherein the server of the local head-end received the requested video asset from the server of the remote head-end, wherein the received video asset is stored in the storage (buffer) of the local head-end – col. 18, lines 21-57, col. 19, lines 20-50.

As for claim 33, Ueno teaches in response to a determination that the requested video asset is to be provided directly from the remote head-end to the requesting subscriber equipment, the content session manager of the remote head-end requests the stream session manager of the remote head-end to allocate bandwidth for providing the requested video asset to the requesting subscriber equipment– col. 18, lines 21-57, col. 19, lines 20-50.

As for claim 34, Ueno teaches wherein the stream session manager of the remote head-end notifies the server of the remote head-end to stream the requested video asset to the requesting subscriber equipment– col. 18, lines 21-57, col. 19, lines 20-50.

5. Claims 6 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Viswanathan, Ueno, and Sato as applied to claim 1 above, and further in view of Starnes (6510469).

As for claims 6 and 27, Viswanathan, Ueno, and Sato fail to disclose wherein a content manager of a local head-end at which a video asset request is received, in response to determining that a requested video asset is stored locally, notifies the stream session manager to deliver the requested video asset to the local server for transmission by the local server to the requesting subscriber equipment via the access network.

In an analogous art, Starnes discloses in response to determining that a file requested by the browser is stored locally, the proxy server notifies the acceleration server to deliver the file to the proxy server for transmission to the browser via the network (col. 5, lines 30-53, col. 6, lines 27-48).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Viswanathan, Ueno, and Sato's invention to include the above mentioned limitation, as taught by Starnes, for the advantage of expediting the process of delivering content to the user.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SUMAIYA A. CHOWDHURY whose

telephone number is (571)272-8567. The examiner can normally be reached on Mon-Fri, 9-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sumaiya A Chowdhury/
Examiner, Art Unit 2421

/Hunter B. Lonsberry/
Primary Examiner, Art Unit 2421